

SEQUENCE LISTING

<110> UCB, S.A.
 LYNCH, Berkley
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 FUKS, Bruno

<120> Methods for the identification of agents for the treatment of seizures, neurological diseases, endocrinopathies and hormonal diseases

<130> 53529-5007-01-WO

<150> US 60/430,372
<151> 2002-12-03

<150> US 60/506,764
<151> 2003-09-30

<160> 16

<170> PatentIn version 3.1

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ctg cac aac aag gag ggc tgc ccg cta gac gtg aca ggg acg ggc gaa Leu His Asn Lys Glu Gly Cys Pro Leu Asp Val Thr Gly Thr Gly Glu 580 585 590	1776
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4/44

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Phe Leu Ser Phe Gly Asn Ser Glu Ser Ala Met Ile Ala Leu Leu Cys		
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ctt ttt ggc ggg gtc agc att gca tcc tgg aat gcg ctg gac gtg ttg		2016
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Thr Ser Phe Val Gly Ile Thr Lys Ala Ala Pro Ile Leu Phe Ala Ser		
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Ala Ala Leu Ala Leu Gly Ser Ser Leu Ala Leu Lys Leu Pro Glu Thr		
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Gly Glu Gly Pro Pro Gly Gly Arg Gly Glu Ala Gln Arg Arg Lys Glu
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His Gly Arg Phe Gln Trp Thr Leu Tyr Phe Val Leu Gly Leu Ala Leu
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Thr Phe Leu Phe Cys Arg Leu Leu Ser Gly Val Gly Ile Gly Gly Ser
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405

410

415

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Met Met Met Gly Val Trp Phe Thr Met Ser Phe Tyr Tyr Gly Leu
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Thr Val Trp Phe Pro Asp Met Ile Arg His Leu Gln Ala Val Asp Tyr
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Ala Ser Arg Thr Lys Val Phe Pro Gly Glu Arg Val Glu His Val Thr
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Asn Asp Lys Phe Ile Gly Leu Arg Leu Lys Ser Val Ser Phe Glu Asp
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675 680 685

Leu Asn Ala Leu Cys Lys Leu Ala Ala Val Leu Gly Ile Ser Ile Phe
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 Ser Asp Val Thr Glu Gly His Asp Glu Glu Asp Glu Ile Tyr Glu Gly
 35 40 45

gag tac cag ggt atc cct cac cca gat gat gtc aag gcc aag cag gcc 192
 Glu Tyr Gln Gly Ile Pro His Pro Asp Asp Val Lys Ala Lys Gln Ala
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Ile Phe Trp Met Thr Gly Gly Leu Tyr Ala Ser Ala Met Ala Trp Ser			
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Ile Ile Pro His Tyr Gly Trp Gly Phe Ser Met Gly Thr Asn Tyr His			
260	265	270	
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Phe His Ser Trp Arg Val Phe Val Ile Val Cys Ala Leu Pro Cys Thr			
275	280	285	
gtg tcc atg gtg gcc ctg aag ttc atg cca gag agc cca agg ttt ctg		912	
Val Ser Met Val Ala Leu Lys Phe Met Pro Glu Ser Pro Arg Phe Leu			
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Leu Glu Met Gly Lys His Asp Glu Ala Trp Met Ile Leu Lys Gln Val			
305	310	315	320
cat gac acc aac atg aga gct aag ggg acc cca gag aaa gtg ttc acg		1008	
His Asp Thr Asn Met Arg Ala Lys Gly Thr Pro Glu Lys Val Phe Thr			
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Val Ser Asn Ile Lys Thr Pro Lys Gln Met Asp Glu Phe Ile Glu Ile			
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420

425

430

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gct ctg gat gtg atc aca gtg gag ctg tat ccc acc aac cag aga gca Ala Leu Asp Val Ile Thr Val Glu Leu Tyr Pro Thr Asn Gln Arg Ala 610	615	620	1872
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Glu Tyr Gln Gly Ile Pro His Pro Asp Asp Val Lys Ala Lys Gln Ala
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Lys Met Ala Pro Ser Arg Met Asp Ser Leu Arg Gly Gln Thr Asp Leu
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Thr Ile Met Asp Glu Cys Gly His Gly Arg Phe Gln Trp Ile Leu Phe
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Glu Phe Leu Ser Arg Glu Lys Arg Gly Glu His Leu Ser Trp Leu Gly
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245 250 255

Ile Ile Pro His Tyr Gly Trp Gly Phe Ser Met Gly Thr Asn Tyr His

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260

265

270

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His Asp Thr Asn Met Arg Ala Lys Gly Thr Pro Glu Lys Val Phe Thr
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340 345 350

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370 375 380

Pro Tyr Arg Met Asn Thr Leu Ile Leu Ala Val Val Trp Phe Ala Met
385 390 395 400

Ala Phe Ser Tyr Tyr Gly Leu Thr Val Trp Phe Pro Asp Met Ile Arg
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Tyr Phe Gln Asp Glu Glu Tyr Lys Ser Lys Met Lys Val Phe Phe Gly
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His Gln His Gly Lys Leu Val Asn Asp Lys Phe Thr Arg Met Tyr Phe
450 455 460

Lys His Val Leu Phe Glu Asp Thr Phe Phe Asp Glu Cys Tyr Phe Glu
465 470 475 480

Asp Val Thr Ser Thr Asp Thr Tyr Phe Lys Asn Cys Thr Ile Glu Ser
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Arg Phe Ile Asn Ser Thr Phe Leu Glu Gln Lys Glu Gly Cys His Met
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Asp Leu Glu Gln Asp Asn Asp Phe Leu Ile Tyr Leu Val Ser Phe Leu
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545 550 555 560

Asp Arg Ile Gly Arg Leu Lys Met Ile Gly Gly Ser Met Leu Ile Ser
565 570 575

Ala Val Cys Cys Phe Phe Leu Phe Phe Gly Asn Ser Glu Ser Ala Met
580 585 590

Ile Gly Trp Gln Cys Leu Phe Cys Gly Thr Ser Ile Ala Ala Trp Asn
 595 600 605

Ala Leu Asp Val Ile Thr Val Glu Leu Tyr Pro Thr Asn Gln Arg Ala
 610 615 620

Thr Ala Phe Gly Ile Leu Asn Gly Leu Cys Lys Phe Gly Ala Ile Leu
 625 630 635 640

Gly Asn Thr Ile Phe Ala Ser Phe Val Gly Ile Thr Lys Val Val Pro
 645 650 655

Ile Leu Leu Ala Ala Ala Ser Leu Val Gly Gly Leu Ile Ala Leu
 660 665 670

Arg Leu Pro Glu Thr Arg Glu Gln Val Leu Met
 675 680

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 Met Glu Asp Ser Tyr Lys Asp Arg Thr Ser Leu Met Lys Gly Ala Lys
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48

gac att gcc aga gag gtg aag aaa caa aca gta aag aag gtg aat caa
 Asp Ile Ala Arg Glu Val Lys Lys Gln Thr Val Lys Lys Val Asn Gln
 20 25 30

96

gct gtg gac cga gcc cag gat gaa tac acc cag agg tcc tac agt cgg
 Ala Val Asp Arg Ala Gln Asp Glu Tyr Thr Gln Arg Ser Tyr Ser Arg
 35 40 45

144

ttc caa gat gaa gaa gat gat gac tac tac ccg gct gga gaa acc
 Phe Gln Asp Glu Glu Asp Asp Asp Tyr Tyr Pro Ala Gly Glu Thr
 50 55 60

192

tat aat ggt gag gcc aac gat gac gaa ggc tca agt gaa gcc act gag
 Tyr Asn Gly Glu Ala Asn Asp Asp Glu Gly Ser Ser Glu Ala Thr Glu
 65 70 75 80

240

ggg cat gat gaa gat gat gag atc tat gag ggg gag tat cag ggc atc
 Gly His Asp Glu Asp Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile
 85 90 95

288

ccc agt atg aac caa gcg aag gac agc atc gtg tca gtg ggg cag ccc
 Pro Ser Met Asn Gln Ala Lys Asp Ser Ile Val Ser Val Gly Gln Pro
 100 105 110

336

aag ggc gat gag tac aag gac cga cgg gag ctg gaa tca gaa agg aga
 Lys Gly Asp Glu Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg

384

115	120	125	
gct gac gag gaa gag tta gcc cag cag tat gag ctg ata atc caa gaa Ala Asp Glu Glu Glu Leu Ala Gln Gln Tyr Glu Leu Ile Ile Gln Glu 130	135	140	432
tgc ggt cat ggt cgt ttt cag tgg gcc ctt ttc gtc ctg ggc atg Cys Gly His Gly Arg Phe Gln Trp Ala Leu Phe Phe Val Leu Gly Met 145	150	155	480
gct ctt atg gca gac ggt gta gag gtg ttt gtc gtt ggc ttc gtg tta Ala Leu Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu 165	170	175	528
ccc agt gct gag aca gac ctc tgc atc cca aat tca gga tct gga tgg Pro Ser Ala Glu Thr Asp Leu Cys Ile Pro Asn Ser Gly Ser Gly Trp 180	185	190	576
cta ggc agc ata gtg tac ctc ggg atg atg gtg ggg gcg ttc ttc tgg Leu Gly Ser Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Phe Trp 195	200	205	624
gga gga ctg gca gac aaa gtg gga agg aaa cag tct ctt ctg att tgc Gly Gly Leu Ala Asp Lys Val Gly Arg Lys Gln Ser Leu Leu Ile Cys 210	215	220	672
atg tct gtc aac gga ttc ttt gcc ttc ctt tct tca ttt gtc caa ggt Met Ser Val Asn Gly Phe Phe Ala Phe Leu Ser Ser Phe Val Gln Gly 225	230	235	720
tat ggc ttc ttt ctc ttc tgt cgc tta ctt tct gga ttc ggg att gga Tyr Gly Phe Phe Leu Phe Cys Arg Leu Leu Ser Gly Phe Gly Ile Gly 245	250	255	768
gga gcc ata ccc act gtg ttc tcg tac ttt gct gaa gtc ctg gcc cgg Gly Ala Ile Pro Thr Val Phe Ser Tyr Phe Ala Glu Val Leu Ala Arg 260	265	270	816
gaa aag cgg ggc gaa cac ttg agc tgg ctc tgc atg ttc tgg atg atc Glu Lys Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile 275	280	285	864
ggc ggc atc tac gcc tct gcc atg gcc tgg gcc atc atc ccg cac tac Gly Gly Ile Tyr Ala Ser Ala Met Ala Trp Ala Ile Ile Pro His Tyr 290	295	300	912
ggg tgg agc ttc agc atg gga tcg gcc tac cag ttt cac agt tgg cgt Gly Trp Ser Phe Ser Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg 305	310	315	960
gtg ttt gtc atc gtc tgt gca ctc ccc tgt gtc tcc tcc gtg gtg gcc Val Phe Val Ile Val Cys Ala Leu Pro Cys Val Ser Ser Val Val Ala 325	330	335	1008
ctc aca ttc atg cct gaa agc cca cga ttc ttg ttg gag gtt gga aaa Leu Thr Phe Met Pro Glu Ser Pro Arg Phe Leu Leu Glu Val Gly Lys 340	345	350	1056
cat gat gaa gct tgg atg att ctg aag tta att cat gac acc aac atg His Asp Glu Ala Trp Met Ile Leu Lys Leu Ile His Asp Thr Asn Met 355	360	365	1104

aga gcc cgg ggt cag cct gag aag gtc ttc acg gta aac aaa ata aaa Arg Ala Arg Gly Gln Pro Glu Lys Val Phe Thr Val Asn Lys Ile Lys 370 375 380	1152
act cct aaa caa ata gat gag ctg att gaa att gag agt gac aca gga Thr Pro Lys Gln Ile Asp Glu Leu Ile Glu Ile Ser Asp Thr Gly 385 390 395 400	1200
aca tgg tat agg agg tgt ttt gtt cgg atc cgc acc gag ctg tac gga Thr Trp Tyr Arg Arg Cys Phe Val Arg Ile Arg Thr Glu Leu Tyr Gly 405 410 415	1248
att tgg ttg act ttt atg aga tgt ttc aac tac cca gtc agg gat aat Ile Trp Leu Thr Phe Met Arg Cys Phe Asn Tyr Pro Val Arg Asp Asn 420 425 430	1296
aca ata aag ctt aca att gtt tgg ttc acc ctg tcc ttt ggg tac tat Thr Ile Lys Leu Thr Ile Val Trp Phe Thr Leu Ser Phe Gly Tyr Tyr 435 440 445	1344
gga tta tcc gtt tgg ttc cct gat gtc att aaa cct ctg cag tcc gat Gly Leu Ser Val Trp Phe Pro Asp Val Ile Lys Pro Leu Gln Ser Asp 450 455 460	1392
gaa tat gca ttg cta acc aga aat gtg gag aga gat aaa tat gca aat Glu Tyr Ala Leu Leu Thr Arg Asn Val Glu Arg Asp Lys Tyr Ala Asn 465 470 475 480	1440
ttc act att aac ttt aca atg gaa aat cag att cat act gga atg gaa Phe Thr Ile Asn Phe Thr Met Glu Asn Gln Ile His Thr Gly Met Glu 485 490 495	1488
tac gac aat ggc aga ttc ata ggg gtc aag ttc aaa tct gta act ttc Tyr Asp Asn Gly Arg Phe Ile Gly Val Lys Phe Lys Ser Val Thr Phe 500 505 510	1536
aaa gac tct gtt ttt aag tcc tgc acc ttt gag gat gta act tca gtg Lys Asp Ser Val Phe Lys Ser Cys Thr Phe Glu Asp Val Thr Ser Val 515 520 525	1584
aac acc tac ttc aag aac tgc aca ttt att gac act gtt ttt gac aac Asn Thr Tyr Phe Lys Asn Cys Thr Phe Ile Asp Thr Val Phe Asp Asn 530 535 540	1632
aca gat ttt gag cca tat aaa ttc att gac agt gaa ttt aaa aac tgc Thr Asp Phe Glu Pro Tyr Lys Phe Ile Asp Ser Glu Phe Lys Asn Cys 545 550 555 560	1680
tcg ttt ttt cac aac aag acg gga tgt cag att acc ttt gat gat gac Ser Phe Phe His Asn Lys Thr Gly Cys Gln Ile Thr Phe Asp Asp Asp 565 570 575	1728
tat agt gcc tac tgg att tat ttt gtc aac ttt ctg ggg aca ttg gca Tyr Ser Ala Tyr Trp Ile Tyr Phe Val Asn Phe Leu Gly Thr Leu Ala 580 585 590	1776
gta ttg cca ggg aac att gtg tct gct ctg ctg atg gac aga att ggg Val Leu Pro Gly Asn Ile Val Ser Ala Leu Leu Met Asp Arg Ile Gly 595 600 605	1824

15/44

cgc tta aca atg cta ggt ggc tct atg gtg ctt tcg ggg atc agc tgt	1872
Arg Leu Thr Met Leu Gly Gly Ser Met Val Leu Ser Gly Ile Ser Cys	
610 615 620	
 ttc ttc ctt tgg ttc ggc acc agt gaa tcc atg atg ata ggc atg ctg	1920
Phe Phe Leu Trp Phe Gly Thr Ser Glu Ser Met Met Ile Gly Met Leu	
625 630 635 640	
 tgt ctg tac aat gga ttg acc atc tca gcc tgg aac tct ctt gac gtg	1968
Cys Leu Tyr Asn Gly Leu Thr Ile Ser Ala Trp Asn Ser Leu Asp Val	
645 650 655	
 gtc act gtg gaa ctg tac ccc aca gac cg agg gca aca ggc ttt ggc	2016
Val Thr Val Glu Leu Tyr Pro Thr Asp Arg Arg Ala Thr Gly Phe Gly	
660 665 670	
 ttc tta aat gcg cta tgc aag gca gca gcc gtc ctg gga aac tta ata	2064
Phe Leu Asn Ala Leu Cys Lys Ala Ala Ala Val Leu Gly Asn Leu Ile	
675 680 685	
 ttt ggc tct ctg gtc agc atc acc aaa tca atc ccc atc ctg ctg gct	2112
Phe Gly Ser Leu Val Ser Ile Thr Lys Ser Ile Pro Ile Leu Leu Ala	
690 695 700	
 tct act gtg ctc gtg tgt gga gga ctc gtt ggg ctg tgc ctg cct gac	2160
Ser Thr Val Leu Val Cys Gly Gly Leu Val Gly Leu Cys Leu Pro Asp	
705 710 715 720	
 aca cga acc cag gtt ctg atg taa	2184
Thr Arg Thr Gln Val Leu Met	
725	

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20 25 30	
 Ala Val Asp Arg Ala Gln Asp Glu Tyr Thr Gln Arg Ser Tyr Ser Arg	
35 40 45	
 Phe Gln Asp Glu Glu Asp Asp Asp Asp Tyr Tyr Pro Ala Gly Glu Thr	
50 55 60	
 Tyr Asn Gly Glu Ala Asn Asp Asp Glu Gly Ser Ser Glu Ala Thr Glu	
65 70 75 80	
 Gly His Asp Glu Asp Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile	
85 90 95	
 Pro Ser Met Asn Gln Ala Lys Asp Ser Ile Val Ser Val Gly Gln Pro	
100 105 110	
 Lys Gly Asp Glu Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg	

16/44

115 120 125

Ala Asp Glu Glu Glu Leu Ala Gln Gln Tyr Glu Leu Ile Ile Gln Glu
130 135 140

Cys Gly His Gly Arg Phe Gln Trp Ala Leu Phe Phe Val Leu Gly Met
145 150 155 160

Ala Leu Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu
165 170 175

Pro Ser Ala Glu Thr Asp Leu Cys Ile Pro Asn Ser Gly Ser Gly Trp
180 185 190

Leu Gly Ser Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Phe Trp
195 200 205

Gly Gly Leu Ala Asp Lys Val Gly Arg Lys Gln Ser Leu Leu Ile Cys
210 215 220

Met Ser Val Asn Gly Phe Phe Ala Phe Leu Ser Ser Phe Val Gln Gly
225 230 235 240

Tyr Gly Phe Phe Leu Phe Cys Arg Leu Leu Ser Gly Phe Gly Ile Gly
245 250 255

Gly Ala Ile Pro Thr Val Phe Ser Tyr Phe Ala Glu Val Leu Ala Arg
260 265 270

Glu Lys Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile
275 280 285

Gly Gly Ile Tyr Ala Ser Ala Met Ala Trp Ala Ile Ile Pro His Tyr
290 295 300

Gly Trp Ser Phe Ser Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg
305 310 315 320

Val Phe Val Ile Val Cys Ala Leu Pro Cys Val Ser Ser Val Val Ala
325 330 335

Leu Thr Phe Met Pro Glu Ser Pro Arg Phe Leu Leu Glu Val Gly Lys
340 345 350

His Asp Glu Ala Trp Met Ile Leu Lys Leu Ile His Asp Thr Asn Met
355 360 365

Arg Ala Arg Gly Gln Pro Glu Lys Val Phe Thr Val Asn Lys Ile Lys
370 375 380

Thr Pro Lys Gln Ile Asp Glu Leu Ile Glu Ile Glu Ser Asp Thr Gly
385 390 395 400

Thr Trp Tyr Arg Arg Cys Phe Val Arg Ile Arg Thr Glu Leu Tyr Gly
405 410 415

Ile Trp Leu Thr Phe Met Arg Cys Phe Asn Tyr Pro Val Arg Asp Asn
420 425 430

Thr Ile Lys Leu Thr Ile Val Trp Phe Thr Leu Ser Phe Gly Tyr Tyr
435 440 445

Gly Leu Ser Val Trp Phe Pro Asp Val Ile Lys Pro Leu Gln Ser Asp
450 455 460

Glu Tyr Ala Leu Leu Thr Arg Asn Val Glu Arg Asp Lys Tyr Ala Asn
465 470 475 480

Phe Thr Ile Asn Phe Thr Met Glu Asn Gln Ile His Thr Gly Met Glu
485 490 495

Tyr Asp Asn Gly Arg Phe Ile Gly Val Lys Phe Lys Ser Val Thr Phe
500 505 510

Lys Asp Ser Val Phe Lys Ser Cys Thr Phe Glu Asp Val Thr Ser Val
515 520 525

Asn Thr Tyr Phe Lys Asn Cys Thr Phe Ile Asp Thr Val Phe Asp Asn
530 535 540

Thr Asp Phe Glu Pro Tyr Lys Phe Ile Asp Ser Glu Phe Lys Asn Cys
545 550 555 560

Ser Phe Phe His Asn Lys Thr Gly Cys Gln Ile Thr Phe Asp Asp Asp
565 570 575

Tyr Ser Ala Tyr Trp Ile Tyr Phe Val Asn Phe Leu Gly Thr Leu Ala
580 585 590

Val Leu Pro Gly Asn Ile Val Ser Ala Leu Leu Met Asp Arg Ile Gly
595 600 605

Arg Leu Thr Met Leu Gly Gly Ser Met Val Leu Ser Gly Ile Ser Cys
610 615 620

Phe Phe Leu Trp Phe Gly Thr Ser Glu Ser Met Met Ile Gly Met Leu
625 630 635 640

Cys Leu Tyr Asn Gly Leu Thr Ile Ser Ala Trp Asn Ser Leu Asp Val
645 650 655

Val Thr Val Glu Leu Tyr Pro Thr Asp Arg Arg Ala Thr Gly Phe Gly
660 665 670

Phe Leu Asn Ala Leu Cys Lys Ala Ala Ala Val Leu Gly Asn Leu Ile
675 680 685

Phe Gly Ser Leu Val Ser Ile Thr Lys Ser Ile Pro Ile Leu Leu Ala
690 695 700

Ser Thr Val Leu Val Cys Gly Gly Leu Val Gly Leu Cys Leu Pro Asp
705 710 715 720

Thr Arg Thr Gln Val Leu Met
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<213> Homo sapiens

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cgt cgc aca gca gag agt gca agg tca gag gac acg gct tca gga	96
Arg Arg Thr Gly Glu Ser Ala Arg Ser Glu Asp Asp Thr Ala Ser Gly	
20 25 30	
gag cat gaa gtc cag att gaa ggg gtc cac gtg ggc cta gag gct gtg	144
Glu His Glu Val Gln Ile Glu Gly Val His Val Gly Leu Glu Ala Val	
35 40 45	
gag ctg gat gat ggg gca gct gtg ccc aag gag ttt gcc aat ccc act	192
Glu Leu Asp Asp Gly Ala Ala Val Pro Lys Glu Phe Ala Asn Pro Thr	
50 55 60	
gat gat act ttc atg gtg gaa gat gca gtg gaa gcc att ggc ttt gga	240
Asp Asp Thr Phe Met Val Glu Asp Ala Val Glu Ala Ile Gly Phe Gly	
65 70 75 80	
aaa ttt cag tgg aag ctg tct gtt ctc act ggc ttg gct tgg atg gct	288
Lys Phe Gln Trp Lys Leu Ser Val Leu Thr Gly Leu Ala Trp Met Ala	
85 90 95	
gat gcc atg gag atg atg atc ctc agc atc ctg gca cca cag ctg cat	336
Asp Ala Met Glu Met Met Ile Leu Ser Ile Leu Ala Pro Gln Leu His	
100 105 110	
tgc gag tgg agg ctc cca agc tgg cag gtg gca ttg ctg acc tcg gtg	384
Cys Glu Trp Arg Leu Pro Ser Trp Gln Val Ala Leu Leu Thr Ser Val	
115 120 125	
gtc ttt gta ggc atg atg tcc agc tcc acg ctc tgg gga aat atc tca	432
Val Phe Val Gly Met Met Ser Ser Thr Leu Trp Gly Asn Ile Ser	
130 135 140	
gac cag tac ggc agg aaa aca ggg ctg aag atc agc gtg ctg tgg act	480
Asp Gln Tyr Gly Arg Lys Thr Gly Leu Lys Ile Ser Val Leu Trp Thr	
145 150 155 160	
ctg tac tat ggc atc ctt agt gca ttt gcg ccc gtg tat agc tgg atc	528
Leu Tyr Tyr Gly Ile Leu Ser Ala Phe Ala Pro Val Tyr Ser Trp Ile	
165 170 175	
ctg gtg ctc cgg ggc ctg gtg ggc ttc ggg atc gga gga gtt ccc cag	576
Leu Val Leu Arg Gly Leu Val Gly Phe Gly Ile Gly Gly Val Pro Gln	
180 185 190	
tgc gtg acg ctg tat gcc gag ttc ctt ccc atg aaa gcc aga gct aaa	624
Ser Val Thr Leu Tyr Ala Glu Phe Leu Pro Met Lys Ala Arg Ala Lys	
195 200 205	
tgt att ttg ctg att gag gta ttc tgg gcc atc ggg aca gtg ttc gag	672
Cys Ile Leu Leu Ile Glu Val Phe Trp Ala Ile Gly Thr Val Phe Glu	
210 215 220	

gtc gtc ctg gct gtg ttc gtg atg ccc agc ctg ggc tgg cgt tgg ctg Val Val Leu Ala Val Phe Val Met Pro Ser Leu Gly Trp Arg Trp Leu 225 230 235 240	720
ctc atc ctc tca gct gtc ccg ctc ctc ttt gcc gtg ctg tgt ttc Leu Ile Leu Ser Ala Val Pro Leu Leu Phe Ala Val Leu Cys Phe 245 250 255	768
tgg ctg cct gaa agt gca agg tat gat gtg ctg tca ggg aac cag gaa Trp Leu Pro Glu Ser Ala Arg Tyr Asp Val Leu Ser Gly Asn Gln Glu 260 265 270	816
aag gca atc gcc acc tta aag agg ata gca act gaa aac gga gct ccc Lys Ala Ile Ala Thr Leu Lys Arg Ile Ala Thr Glu Asn Gly Ala Pro 275 280 285	864
atg ccg ctg ggg aaa ctc atc atc tcc aga cag gaa gac cga ggc aaa Met Pro Leu Gly Lys Leu Ile Ile Ser Arg Gln Glu Asp Arg Gly Lys 290 295 300	912
atg agg gac ctt ttc aca ccc cat ttt aga tgg aca act ttg ctg ctg Met Arg Asp Leu Phe Thr Pro His Phe Arg Trp Thr Thr Leu Leu Leu 305 310 315 320	960
tgg ttt ata tgg ttt tcc aat gca ttc tct tac tac ggg tta gtt cta Trp Phe Ile Trp Phe Ser Asn Ala Phe Ser Tyr Tyr Gly Leu Val Leu 325 330 335	1008
ctc acc aca gaa ctc ttc cag gca gga gat gtc tgc ggc atc tcc agt Leu Thr Thr Glu Leu Phe Gln Ala Gly Asp Val Cys Gly Ile Ser Ser 340 345 350	1056
cg ^g aag aag gct gta gag gca aaa tgc agc ctg gcc tgc gag tac ctg Arg Lys Lys Ala Val Glu Ala Lys Cys Ser Leu Ala Cys Glu Tyr Leu 355 360 365	1104
agt gag gag gat tac atg gac ttg ctg tgg acc acc ctc tct gag ttt Ser Glu Glu Asp Tyr Met Asp Leu Leu Trp Thr Thr Leu Ser Glu Phe 370 375 380	1152
cca ggt gtc ctt gtg act ctg tgg att att gac cgc ctg ggg cgc aag Pro Gly Val Leu Val Thr Leu Trp Ile Ile Asp Arg Leu Gly Arg Lys 385 390 395 400	1200
aag acc atg gcc ctg tgc ttt gtc atc ttc tcc ttc tgc agc ctc ctg Lys Thr Met Ala Leu Cys Phe Val Ile Phe Ser Phe Cys Ser Leu Leu 405 410 415	1248
ctg ttt atc tgt gtt gga aga aat gtg ctc act ctg tta ctc ttc att Leu Phe Ile Cys Val Gly Arg Asn Val Leu Thr Leu Leu Phe Ile 420 425 430	1296
gca aga gcg ttt att tct gga ggc ttt caa gcg gca tat gtt tac aca Ala Arg Ala Phe Ile Ser Gly Gly Phe Gln Ala Ala Tyr Val Tyr Thr 435 440 445	1344
cct gag gtc tac ccc acg gca acg cgg gcc ctc ggc ctg ggc acc tgc Pro Glu Val Tyr Pro Thr Ala Thr Arg Ala Leu Gly Leu Gly Thr Cys 450 455 460	1392

20/44

agc ggc atg gca aga gtg ggt gct ctc atc act ccg ttc atc gcc cag Ser Gly Met Ala Arg Val Gly Ala Leu Ile Thr Pro Phe Ile Ala Gln 465 470 475 480	1440
gtg atg ctg gaa tcc tct gtg tac ctg act ctg gca gtt tac agt ggc Val Met Leu Glu Ser Ser Val Tyr Leu Thr Leu Ala Val Tyr Ser Gly 485 490 495	1488
tgc tgc ctc ctg gct gcc ctg gcc tcc tgc ttt ttg ccc att gag acc Cys Cys Leu Leu Ala Ala Leu Ala Ser Cys Phe Leu Pro Ile Glu Thr 500 505 510	1536
aaa ggc cga gga ctg cag gag tcc agc cac cgg gag tgg ggc cag gag Lys Gly Arg Gly Leu Gln Glu Ser Ser His Arg Glu Trp Gly Gln Glu 515 520 525	1584
atg gtc ggc cga gga atg cac ggt gca ggt gtt acc agg tcg aac tct Met Val Gly Arg Gly Met His Gly Ala Gly Val Thr Arg Ser Asn Ser 530 535 540	1632
ggc tct cag gaa tag Gly Ser Gln Glu 545	1647
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Arg Arg Thr Gly Glu Ser Ala Arg Ser Glu Asp Asp Thr Ala Ser Gly 20 25 30	
Glu His Glu Val Gln Ile Glu Gly Val His Val Gly Leu Glu Ala Val 35 40 45	
Glu Leu Asp Asp Gly Ala Ala Val Pro Lys Glu Phe Ala Asn Pro Thr 50 55 60	
Asp Asp Thr Phe Met Val Glu Asp Ala Val Glu Ala Ile Gly Phe Gly 65 70 75 80	
Lys Phe Gln Trp Lys Leu Ser Val Leu Thr Gly Leu Ala Trp Met Ala 85 90 95	
Asp Ala Met Glu Met Met Ile Leu Ser Ile Leu Ala Pro Gln Leu His 100 105 110	
Cys Glu Trp Arg Leu Pro Ser Trp Gln Val Ala Leu Leu Thr Ser Val 115 120 125	
Val Phe Val Gly Met Met Ser Ser Ser Thr Leu Trp Gly Asn Ile Ser 130 135 140	
Asp Gln Tyr Gly Arg Lys Thr Gly Leu Lys Ile Ser Val Leu Trp Thr 145 150 155 160	

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Leu Tyr Tyr Gly Ile Leu Ser Ala Phe Ala Pro Val Tyr Ser Trp Ile
165 170 175

Leu Val Leu Arg Gly Leu Val Gly Phe Gly Ile Gly Gly Val Pro Gln
180 185 190

Ser Val Thr Leu Tyr Ala Glu Phe Leu Pro Met Lys Ala Arg Ala Lys
195 200 205

Cys Ile Leu Leu Ile Glu Val Phe Trp Ala Ile Gly Thr Val Phe Glu
210 215 220

Val Val Leu Ala Val Phe Val Met Pro Ser Leu Gly Trp Arg Trp Leu
225 230 235 240

Leu Ile Leu Ser Ala Val Pro Leu Leu Phe Ala Val Leu Cys Phe
245 250 255

Trp Leu Pro Glu Ser Ala Arg Tyr Asp Val Leu Ser Gly Asn Gln Glu
260 265 270

Lys Ala Ile Ala Thr Leu Lys Arg Ile Ala Thr Glu Asn Gly Ala Pro
275 280 285

Met Pro Leu Gly Lys Leu Ile Ile Ser Arg Gln Glu Asp Arg Gly Lys
290 295 300

Met Arg Asp Leu Phe Thr Pro His Phe Arg Trp Thr Thr Leu Leu Leu
305 310 315 320

Trp Phe Ile Trp Phe Ser Asn Ala Phe Ser Tyr Tyr Gly Leu Val Leu
325 330 335

Leu Thr Thr Glu Leu Phe Gln Ala Gly Asp Val Cys Gly Ile Ser Ser
340 345 350

Arg Lys Lys Ala Val Glu Ala Lys Cys Ser Leu Ala Cys Glu Tyr Leu
355 360 365

Ser Glu Glu Asp Tyr Met Asp Leu Leu Trp Thr Thr Leu Ser Glu Phe
370 375 380

Pro Gly Val Leu Val Thr Leu Trp Ile Ile Asp Arg Leu Gly Arg Lys
385 390 395 400

Lys Thr Met Ala Leu Cys Phe Val Ile Phe Ser Phe Cys Ser Leu Leu
405 410 415

Leu Phe Ile Cys Val Gly Arg Asn Val Leu Thr Leu Leu Phe Ile
420 425 430

Ala Arg Ala Phe Ile Ser Gly Gly Phe Gln Ala Ala Tyr Val Tyr Thr
435 440 445

Pro Glu Val Tyr Pro Thr Ala Thr Arg Ala Leu Gly Leu Gly Thr Cys
450 455 460

Ser Gly Met Ala Arg Val Gly Ala Leu Ile Thr Pro Phe Ile Ala Gln
465 470 475 480

Val Met Leu Glu Ser Ser Val Tyr Leu Thr Leu Ala Val Tyr Ser Gly

22/44

485

490

495

Cys Cys Leu Leu Ala Ala Leu Ala Ser Cys Phe Leu Pro Ile Glu Thr
 500 505 510

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Met Val Gly Arg Gly Met His Gly Ala Gly Val Thr Arg Ser Asn Ser
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Gly Ser Gln Glu
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tcctcagttt atcctttcca acctggctcc cccttcccag ttccccctccc tactccctgt 180
ctccctcccc aactcacccct actgaactgg gtgcagagca aagccctttt cgccctttc 240
cccatctgga cttctctggc cagttcctct tagtccgatc ccaaagacac tggaacacat 300
ttctaaaggg tcttcttgat ccctccaatt cattgagcaa agggctgaaa aagaagcaga 360
gagtaaggta gagccagtga ctgcggccca agccccatc atg gaa gaa ggc ttt 414
Met Glu Glu Gly Phe
1 5

cga gac cga gca gcg ttc atc cgt ggg gcc aaa gac att gcc aag gaa 462
Arg Asp Arg Ala Ala Phe Ile Arg Gly Ala Lys Asp Ile Ala Lys Glu
10 15 20

gtt aag aag cac gcg gcc aag aag gtg gtg aag ggt ctc gac aga gtc 510
Val Lys Lys His Ala Ala Lys Lys Val Val Lys Gly Leu Asp Arg Val
25 30 35

cag gat gaa tat tcc cga agg tcc tac tcc cgc ttt gag gag gag gag 558
Gln Asp Glu Tyr Ser Arg Arg Ser Tyr Ser Arg Phe Glu Glu Glu Glu
40 45 50

gat gat gat gac ttc cct gcc cct gct gac ggc tat tac cgc gga gaa 606
Asp Asp Asp Asp Phe Pro Ala Pro Ala Asp Gly Tyr Tyr Arg Gly Glu
55 60 65

ggg gcc cag gat gag gag gaa ggt ggc gct tcc agt gat gcc act gag 654
Gly Ala Gln Asp Glu Glu Glu Gly Ala Ser Ser Asp Ala Thr Glu
70 75 80 85

ggc cac gat gag gat gag atc tac gag gga gaa tat cag ggc atc Gly His Asp Glu Asp Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile 90 95 100	702
ccc cgg gca gag tct ggg ggc aaa ggc gaa cgg atg gca gat ggg gca Pro Arg Ala Glu Ser Gly Gly Lys Gly Glu Arg Met Ala Asp Gly Ala 105 110 115	750
ccc ctg gct gga gtg aga ggg ggc tta agt gat ggg gag ggt ccc cct Pro Leu Ala Gly Val Arg Gly Gly Leu Ser Asp Gly Glu Gly Pro Pro 120 125 130	798
ggg ggt cgc ggg gag gcg cag cgg cgt aaa gat cgg gaa gaa ttg gct Gly Gly Arg Gly Ala Gln Arg Arg Lys Asp Arg Glu Glu Leu Ala 135 140 145	846
cag cag tat gag acc atc ctc cgg gag tgc ggc cat ggt cgc ttc cag Gln Gln Tyr Glu Thr Ile Leu Arg Glu Cys Gly His Gly Arg Phe Gln 150 155 160 165	894
tgg aca ctc tac ttc gtg ctg ggt ctg gcg ctg atg gcc gat ggt gta Trp Thr Leu Tyr Phe Val Leu Gly Leu Ala Leu Met Ala Asp Gly Val 170 175 180	942
gag gtc ttt gtg gtg ggc ttt gtg ctg ccc agt gct gag aaa gat atg Glu Val Phe Val Val Gly Phe Val Leu Pro Ser Ala Glu Lys Asp Met 185 190 195	990
tgc ctg tcg gac tcc aac aaa ggc atg cta ggc ctc att gtg tac ctg Cys Leu Ser Asp Ser Asn Lys Gly Met Leu Gly Leu Ile Val Tyr Leu 200 205 210	1038
ggc atg atg gtg ggg gcc ttc ctc tgg gga ggc ctg gct gat cgg ctg Gly Met Met Val Gly Ala Phe Leu Trp Gly Gly Leu Ala Asp Arg Leu 215 220 225	1086
ggt cgg aga cag tgt ctg ctc atc tcg ctc tca gtc aac agc gtc ttc Gly Arg Arg Gln Cys Leu Leu Ile Ser Leu Ser Val Asn Ser Val Phe 230 235 240 245	1134
gct ttc ttc tca tcc ttc gtc cag ggt tat ggc acc ttc ctt ttc tgc Ala Phe Phe Ser Ser Phe Val Gln Gly Tyr Gly Thr Phe Leu Phe Cys 250 255 260	1182
cgc ctc ctt tct ggg gtt ggg att ggt ggt tcc atc ccc att gtc ttc Arg Leu Leu Ser Gly Val Gly Ile Gly Ser Ile Pro Ile Val Phe 265 270 275	1230
tcc tat ttt tcg gag ttt ctg gcc cag gag aaa cgt ggg gag cat ttg Ser Tyr Phe Ser Glu Phe Leu Ala Gln Glu Lys Arg Gly Glu His Leu 280 285 290	1278
agc tgg ctc tgt atg ttc tgg att ggt ggc gtg tat gca gct gca Ser Trp Leu Cys Met Phe Trp Met Ile Gly Gly Val Tyr Ala Ala Ala 295 300 305	1326
atg gcc tgg gcc atc atc ccc cac tat ggg tgg agt ttc cag atg ggc Met Ala Trp Ala Ile Ile Pro His Tyr Gly Trp Ser Phe Gln Met Gly 310 315 320 325	1374

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tct gct tac cag ttc cac agc tgg agg gtc ttt gtc ctc gtc ttt gcc Ser Ala Tyr Gln Phe His Ser Trp Arg Val Phe Val Leu Val Phe Ala 330 335 340	1422
ttt ccc tct gtg ttt gcc atc ggg gct ctg act acg cag ccg gag agt Phe Pro Ser Val Phe Ala Ile Gly Ala Leu Thr Thr Gln Pro Glu Ser 345 350 355	1470
ccc cgc ttc ttc tta gag aat ggg aag cac gat gag gcc tgg atg gtg Pro Arg Phe Phe Leu Glu Asn Gly Lys His Asp Glu Ala Trp Met Val 360 365 370	1518
ctg aag cag gtt cat gac acc aac atg cga gcc aag ggc cat cct gag Leu Lys Gln Val His Asp Thr Asn Met Arg Ala Lys Gly His Pro Glu 375 380 385	1566
cga gtc ttc tca gta acc cac att aaa acg att cat cag gag gat gaa Arg Val Phe Ser Val Thr His Ile Lys Thr Ile His Gln Glu Asp Glu 390 395 400 405	1614
ttg att gag atc cag tca gac aca gga acc tgg tac cag cgc tgg gga Leu Ile Glu Ile Gln Ser Asp Thr Gly Thr Trp Tyr Gln Arg Trp Gly 410 415 420	1662
gtg cgg gct ttg agc ctg ggg ggt cag gtt tgg ggg aac ttc ctc tcc Val Arg Ala Leu Ser Leu Gly Gly Gln Val Trp Gly Asn Phe Leu Ser 425 430 435	1710
tgc ttc agt cca gag tac cgg cgc atc act ctg atg atg atg ggg gta Cys Phe Ser Pro Glu Tyr Arg Arg Ile Thr Leu Met Met Met Gly Val 440 445 450	1758
tgg ttc acc atg tcc ttc agc tac tac ggt ttg act gtc tgg ttt ccc Trp Phe Thr Met Ser Phe Ser Tyr Tyr Gly Leu Thr Val Trp Phe Pro 455 460 465	1806
gac atg atc cgc cat ctc cag gct gtg gac tat gca gcc cga acc aaa Asp Met Ile Arg His Leu Gln Ala Val Asp Tyr Ala Ala Arg Thr Lys 470 475 480 485	1854
gtg ttc cca ggg gag cgc gtg gag cac gtg aca ttt aac ttc aca ctg Val Phe Pro Gly Glu Arg Val Glu His Val Thr Phe Asn Phe Thr Leu 490 495 500	1902
gag aat cag atc cac cga ggg gga cag tac ttc aat gac aag ttc atc Glu Asn Gln Ile His Arg Gly Gly Gln Tyr Phe Asn Asp Lys Phe Ile 505 510 515	1950
ggg ctg cgt ctg aag tca gtg tcc ttt gag gat tcc ctg ttt gag gaa Gly Leu Arg Leu Lys Ser Val Ser Phe Glu Asp Ser Leu Phe Glu Glu 520 525 530	1998
tgt tac ttt gaa gat gtc aca tcc agc aac aca ttc ttc cgc aac tgc Cys Tyr Phe Glu Asp Val Thr Ser Ser Asn Thr Phe Phe Arg Asn Cys 535 540 545	2046
aca ttc atc aac acc gtg ttc tac aac acg gac ctg ttt gag tac aag Thr Phe Ile Asn Thr Val Phe Tyr Asn Thr Asp Leu Phe Glu Tyr Lys 550 555 560 565	2094
ttc gtg aac agc cgc ctg gtg aac agc aca ttc ctg cac aat aag gaa	2142

Phe Val Asn Ser Arg Leu Val Asn Ser Thr Phe Leu His Asn Lys Glu		
570	575	580
ggt tgc cca cta gat gtg aca ggg acg ggc gaa ggt gcc tac atg gtg		2190
Gly Cys Pro Leu Asp Val Thr Gly Thr Gly Glu Gly Ala Tyr Met Val		
585	590	595
tac ttt gtc agc ttc ttg ggg aca ctg gct gtg ctc cct gga aat att		2238
Tyr Phe Val Ser Phe Leu Gly Thr Leu Ala Val Leu Pro Gly Asn Ile		
600	605	610
gtg tct gct ctg ctc atg gac aag att ggc agg ctc aga atg ctt gct		2286
Val Ser Ala Leu Leu Met Asp Lys Ile Gly Arg Leu Arg Met Leu Ala		
615	620	625
ggt tcc agt gtg ttg tcc tgt gtt tcc tgc ttc ctg tct ttt ggg		2334
Gly Ser Ser Val Leu Ser Cys Val Ser Cys Phe Phe Leu Ser Phe Gly		
630	635	640
aac agt gag tca gcc atg atc gct ctg ctc tgc ctt ttt ggg gga gtc		2382
Asn Ser Glu Ser Ala Met Ile Ala Leu Leu Cys Leu Phe Gly Gly Val		
650	655	660
agt att gca tcc tgg aac gcg ctg gac gtg ctg act gtt gaa ctc tac		2430
Ser Ile Ala Ser Trp Asn Ala Leu Asp Val Leu Thr Val Glu Leu Tyr		
665	670	675
cct tcc gac aag agg acg acg gcc ttc ggc ttc ctg aat gcc ctg tgt		2478
Pro Ser Asp Lys Arg Thr Thr Ala Phe Gly Phe Leu Asn Ala Leu Cys		
680	685	690
aag ctg gca gct gta ctg ggc atc agc atc ttc acg tcc ttt gtg gga		2526
Lys Leu Ala Ala Val Leu Gly Ile Ser Ile Phe Thr Ser Phe Val Gly		
695	700	705
atc acc aag gcc gct ccc atc ctc ttc gcc tca gct gcg ctt gcc ctt		2574
Ile Thr Lys Ala Ala Pro Ile Leu Phe Ala Ser Ala Ala Leu Ala Leu		
710	715	720
725		
ggt agc tct ctg gct ctg aag ctg cct gag acc cgg gga cag gtg ctg		2622
Gly Ser Ser Leu Ala Leu Lys Leu Pro Glu Thr Arg Gly Gln Val Leu		
730	735	740
cag tga gggatggggg agtgtctcag gggcttttagg gatggcaggc acactgtgac		2678
Gln		
caataatttc ttttatccct accctgcacct gctgtcctgg tcctactccg tgtttggtgt		2738
cttagctgtg tgcctgtgtg catgtgtgtg accctgacgg gcaggggcta cggggaggg		2798
ccctttgtcc catgtttggg aggagggact cccccacctgc tgccaccctc aactttgcac		2858
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tgagtgggag cctcccaagg atgctgggaa gtagcaataa accttagcct ccgtttcac		3098
ctcaattcag gctacaagtg tgaagcctgg attttatgga attagtttc tgattcttat		3158

ttatatgtaa gttctgaggc agcttagctg gactgtgtgt ggatgtatac atacactcat	3218
atgtgtgtgt gtgtgcgcgg cgtgcgtgtg cgtgtgtgtatgtgtccat ggggtagggg	3278
taccactata ctgttcaatt ataagccaag agtagtagtt tcagtgagca cacacacaac	3338
actgttttc tatcgtaact cccagaatct tgtacctgtg ttggggctgc aggcagaagt	3398
ccttggtcag gctgggtga gccctgcaat cttggggac ctgagggeac ctgacaagga	3458
ctttctcctt cctctagaga gttctaccc actagccaca gccctccat ctgacctgtc	3518
cacacaggca gtgtatcaga ggaaagaaag ggaaaataac caggcacaca tggtcaaacc	3578
agcaggtctg aaagcacaag aagctgggc agggcagga agcaggggtc catcccctaa	3638
cccttctcaa aaaggctggg tcgtgaggga cccctaattgc agggacctga agcctcagtt	3698
tccccatctt gccctccac agaacagcct ctgttaggtag agctgcccc cgtcctaccc	3758
tactcttgtg gctgcttct ttggtactct tccactccc accgttagctg tgacgtgttg	3818
tagtttttag ctgttgtaa aatgtt	3844

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<211> 742
<212> PRT
<213> Rattus norvegicus

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Met Glu Glu Gly Phe Arg Asp Arg Ala Ala Phe Ile Arg Gly Ala Lys			
1	5	10	15
Asp Ile Ala Lys Glu Val Lys Lys His Ala Ala Lys Lys Val Val Lys			
20	25	30	
Gly Leu Asp Arg Val Gln Asp Glu Tyr Ser Arg Arg Ser Tyr Ser Arg			
35	40	45	
Phe Glu Glu Glu Asp Asp Asp Asp Phe Pro Ala Pro Ala Asp Gly			
50	55	60	
Tyr Tyr Arg Gly Glu Gly Ala Gln Asp Glu Glu Glu Gly Gly Ala Ser			
65	70	75	80
Ser Asp Ala Thr Glu Gly His Asp Glu Asp Asp Glu Ile Tyr Glu Gly			
85	90	95	
Glu Tyr Gln Gly Ile Pro Arg Ala Glu Ser Gly Gly Lys Gly Glu Arg			
100	105	110	
Met Ala Asp Gly Ala Pro Leu Ala Gly Val Arg Gly Gly Leu Ser Asp			
115	120	125	
Gly Glu Gly Pro Pro Gly Gly Arg Gly Glu Ala Gln Arg Arg Lys Asp			
130	135	140	
Arg Glu Glu Leu Ala Gln Gln Tyr Glu Thr Ile Leu Arg Glu Cys Gly			
145	150	155	160

His Gly Arg Phe Gln Trp Thr Leu Tyr Phe Val Leu Gly Leu Ala Leu
165 170 175

Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu Pro Ser
180 185 190

Ala Glu Lys Asp Met Cys Leu Ser Asp Ser Asn Lys Gly Met Leu Gly
195 200 205

Leu Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Leu Trp Gly Gly
210 215 220

Leu Ala Asp Arg Leu Gly Arg Arg Gln Cys Leu Leu Ile Ser Leu Ser
225 230 235 240

Val Asn Ser Val Phe Ala Phe Ser Ser Phe Val Gln Gly Tyr Gly
245 250 255

Thr Phe Leu Phe Cys Arg Leu Leu Ser Gly Val Gly Ile Gly Gly Ser
260 265 270

Ile Pro Ile Val Phe Ser Tyr Phe Ser Glu Phe Leu Ala Gln Glu Lys
275 280 285

Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile Gly Gly
290 295 300

Val Tyr Ala Ala Ala Met Ala Trp Ala Ile Ile Pro His Tyr Gly Trp
305 310 315 320

Ser Phe Gln Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg Val Phe
325 330 335

Val Leu Val Phe Ala Phe Pro Ser Val Phe Ala Ile Gly Ala Leu Thr
340 345 350

Thr Gln Pro Glu Ser Pro Arg Phe Phe Leu Glu Asn Gly Lys His Asp
355 360 365

Glu Ala Trp Met Val Leu Lys Gln Val His Asp Thr Asn Met Arg Ala
370 375 380

Lys Gly His Pro Glu Arg Val Phe Ser Val Thr His Ile Lys Thr Ile
385 390 395 400

His Gln Glu Asp Glu Leu Ile Glu Ile Gln Ser Asp Thr Gly Thr Trp
405 410 415

Tyr Gln Arg Trp Gly Val Arg Ala Leu Ser Leu Gly Gly Gln Val Trp
420 425 430

Gly Asn Phe Leu Ser Cys Phe Ser Pro Glu Tyr Arg Arg Ile Thr Leu
435 440 445

Met Met Met Gly Val Trp Phe Thr Met Ser Phe Ser Tyr Tyr Gly Leu
450 455 460

Thr Val Trp Phe Pro Asp Met Ile Arg His Leu Gln Ala Val Asp Tyr
465 470 475 480

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Ala Ala Arg Thr Lys Val Phe Pro Gly Glu Arg Val Glu His Val Thr
485 490 495

Phe Asn Phe Thr Leu Glu Asn Gln Ile His Arg Gly Gly Gln Tyr Phe
500 505 510

Asn Asp Lys Phe Ile Gly Leu Arg Leu Lys Ser Val Ser Phe Glu Asp
515 520 525

Ser Leu Phe Glu Glu Cys Tyr Phe Glu Asp Val Thr Ser Ser Asn Thr
530 535 540

Phe Phe Arg Asn Cys Thr Phe Ile Asn Thr Val Phe Tyr Asn Thr Asp
545 550 555 560

Leu Phe Glu Tyr Lys Phe Val Asn Ser Arg Leu Val Asn Ser Thr Phe
565 570 575

Leu His Asn Lys Glu Gly Cys Pro Leu Asp Val Thr Gly Thr Gly Glu
580 585 590

Gly Ala Tyr Met Val Tyr Phe Val Ser Phe Leu Gly Thr Leu Ala Val
595 600 605

Leu Pro Gly Asn Ile Val Ser Ala Leu Leu Met Asp Lys Ile Gly Arg
610 615 620

Leu Arg Met Leu Ala Gly Ser Ser Val Leu Ser Cys Val Ser Cys Phe
625 630 635 640

Phe Leu Ser Phe Gly Asn Ser Glu Ser Ala Met Ile Ala Leu Leu Cys
645 650 655

Leu Phe Gly Gly Val Ser Ile Ala Ser Trp Asn Ala Leu Asp Val Leu
660 665 670

Thr Val Glu Leu Tyr Pro Ser Asp Lys Arg Thr Thr Ala Phe Gly Phe
675 680 685

Leu Asn Ala Leu Cys Lys Leu Ala Ala Val Leu Gly Ile Ser Ile Phe
690 695 700

Thr Ser Phe Val Gly Ile Thr Lys Ala Ala Pro Ile Leu Phe Ala Ser
705 710 715 720

Ala Ala Leu Ala Leu Gly Ser Ser Leu Ala Leu Lys Leu Pro Glu Thr
725 730 735

Arg Gly Gln Val Leu Gln
740

<210> 11
<211> 2052
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (1)..(2052)
<223>

<400>	11		
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Met Asp Asp Tyr Arg Tyr Arg Asp Asn Tyr Glu Gly Tyr Ala Pro Asn			
1	5	10	15
gat ggc tac tac cgg ggc aat gag cag aac ccg gaa gaa gat gca cag			96
Asp Gly Tyr Tyr Arg Gly Asn Glu Gln Asn Pro Glu Glu Asp Ala Gln			
20	25	30	
agc gat gtt aca gaa ggc cac gat gaa gag gat atc tat gag ggc			144
Ser Asp Val Thr Glu Gly His Asp Glu Glu Asp Glu Ile Tyr Glu Gly			
35	40	45	
gag tac caa ggc atc cct cat cca gat gat gtc aag tct aag cag act			192
Glu Tyr Gln Gly Ile Pro His Pro Asp Asp Val Lys Ser Lys Gln Thr			
50	55	60	
aag atg gca ccg tcc aga gca gat ggc ctt cgg ggc cag gca gac ctg			240
Lys Met Ala Pro Ser Arg Ala Asp Gly Leu Arg Gly Gln Ala Asp Leu			
65	70	75	80
atg gct gag aga atg gaa gat gag gag cag ctc gct cac cag tac gag			288
Met Ala Glu Arg Met Glu Asp Glu Glu Gln Leu Ala His Gln Tyr Glu			
85	90	95	
acc atc att gat gag tgt ggc cat ggg cgc ttc cag tgg acc ctc ttt			336
Thr Ile Ile Asp Glu Cys Gly His Gly Arg Phe Gln Trp Thr Leu Phe			
100	105	110	
ttc gtc ttg gtc ttg gcc ttg atg gct gac gga gtg gaa gtg ttt gtg			384
Phe Val Leu Val Leu Ala Leu Met Ala Asp Gly Val Glu Val Phe Val			
115	120	125	
gtg agc ttt gct ctg cca agt gca gag aaa gat atg tgt ctg tca agt			432
Val Ser Phe Ala Leu Pro Ser Ala Glu Lys Asp Met Cys Leu Ser Ser			
130	135	140	
tcc aag aaa gga atg ctc ggg ctg att gtc tac cta gga atg atg gca			480
Ser Lys Lys Gly Met Leu Gly Leu Ile Val Tyr Leu Gly Met Met Ala			
145	150	155	160
gga gcc ttc atc ctg ggg ggc ctg gct gat aaa ctg gga agg aag aag			528
Gly Ala Phe Ile Leu Gly Leu Ala Asp Lys Leu Gly Arg Lys Lys			
165	170	175	
gtc ctc agc atg tcc ttg gct atc aat gct tcc ttt gcc tcc ctc tcc			576
Val Leu Ser Met Ser Leu Ala Ile Asn Ala Ser Phe Ala Ser Leu Ser			
180	185	190	
tcc ttc gtg cag gga tat gga gct ttc ctc ttc tgc aga ctc atc tca			624
Ser Phe Val Gln Gly Tyr Gly Ala Phe Leu Phe Cys Arg Leu Ile Ser			
195	200	205	
ggc ata ggt att ggg ggc tcc ctg cca att gtt ttt gcc tac ttt tct			672
Gly Ile Gly Ile Gly Ser Leu Pro Ile Val Phe Ala Tyr Phe Ser			
210	215	220	
gag ttc tta tca cgg gag aaa cgc ggt gag cat ctc agc tgg ctg ggt			720
Glu Phe Leu Ser Arg Glu Lys Arg Gly Glu His Leu Ser Trp Leu Gly			
225	230	235	240

atc ttc tgg atg act ggg ggc atc tac gca tct gcc atg gcc tgg agc Ile Phe Trp Met Thr Gly Gly Ile Tyr Ala Ser Ala Met Ala Trp Ser 245 250 255	768
atc att cca cac tat ggc tgg ggc ttc agc atg gga acc aat tat cac Ile Ile Pro His Tyr Gly Trp Gly Phe Ser Met Gly Thr Asn Tyr His 260 265 270	816
ttc cac agc tgg aga gtg ttt gtc atc gtc tgt gct ctg cct gcc act Phe His Ser Trp Arg Val Phe Val Ile Val Cys Ala Leu Pro Ala Thr 275 280 285	864
gtg tcc atg gtg gcc ctg aag ttc atg cca gaa agc ccc agg ttc ctg Val Ser Met Val Ala Leu Lys Phe Met Pro Glu Ser Pro Arg Phe Leu 290 295 300	912
ctg gag atg ggc aag cat gat gaa gcc tgg atg att ctc aag caa gtc Leu Glu Met Gly Lys His Asp Glu Ala Trp Met Ile Leu Lys Gln Val 305 310 315 320	960
cat gac acc aac atg aga gct aag ggg acc cct gag aag gtg ttc acg His Asp Thr Asn Met Arg Ala Lys Gly Thr Pro Glu Lys Val Phe Thr 325 330 335	1008
gtt tcc cac atc aaa act ccc aag caa atg gat gaa ttc att gag atc Val Ser His Ile Lys Thr Pro Lys Gln Met Asp Glu Phe Ile Glu Ile 340 345 350	1056
cag agt tca aca ggg act tgg tac cag cgc tgg ttg gtc agg ttc atg Gln Ser Ser Thr Gly Thr Trp Tyr Gln Arg Trp Leu Val Arg Phe Met 355 360 365	1104
acc att ttc aaa cag gtg tgg gat aac gcc ttg tac tgt gtg atg gga Thr Ile Phe Lys Gln Val Trp Asp Asn Ala Leu Tyr Cys Val Met Gly 370 375 380	1152
ccc tac aga atg aac acc ctg att ctg gct gtg gtc tgg ttc acc atg Pro Tyr Arg Met Asn Thr Leu Ile Leu Ala Val Val Trp Phe Thr Met 385 390 395 400	1200
gcc tta agt tac tat ggc ctg aca gtg tgg ttc ccc gac atg atc cgg Ala Leu Ser Tyr Tyr Gly Leu Thr Val Trp Phe Pro Asp Met Ile Arg 405 410 415	1248
tat ttc cag gat gaa gaa tat aag tct aaa atg aag gtg ttt ttt ggt Tyr Phe Gln Asp Glu Glu Tyr Lys Ser Lys Met Lys Val Phe Phe Gly 420 425 430	1296
gag cac gtg cat ggc gcc aca atc aac ttc acc atg gaa aac cag atc Glu His Val His Gly Ala Thr Ile Asn Phe Thr Met Glu Asn Gln Ile 435 440 445	1344
cac caa cat ggg aag ctt gtg aac gat aag ttc ata aag atg tac ttt His Gln His Gly Lys Leu Val Asn Asp Lys Phe Ile Lys Met Tyr Phe 450 455 460	1392
aag cat gtc ctc ttt gag gac aca ttc ttt gac aaa tgc tat ttt gaa Lys His Val Leu Phe Glu Asp Thr Phe Phe Asp Lys Cys Tyr Phe Glu 465 470 475 480	1440

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gat gtg aca tcc aca gat act tat ttc aag aac tgc acc att gaa tcg Asp Val Thr Ser Thr Asp Thr Tyr Phe Lys Asn Cys Thr Ile Glu Ser 485 490 495	1488
act acc ttc tac aac aca gac ctc tac aaa cac aag ttc att gac tgt Thr Thr Phe Tyr Asn Thr Asp Leu Tyr Lys His Lys Phe Ile Asp Cys 500 505 510	1536
cgg ttt atc aat tcc acc ttt ctg gag cag aag gag ggc tgc cac atg Arg Phe Ile Asn Ser Thr Phe Leu Glu Gln Lys Glu Gly Cys His Met 515 520 525	1584
gac ttt gaa gag gac aat gat ttt ctg att tac ctc gtc agc ttc ctc Asp Phe Glu Glu Asp Asn Asp Phe Leu Ile Tyr Leu Val Ser Phe Leu 530 535 540	1632
ggc agc ctg tct gtc ttg cct ggg aac ata att tct gcc ctg ctc atg Gly Ser Leu Ser Val Leu Pro Gly Asn Ile Ile Ser Ala Leu Leu Met 545 550 555 560	1680
gac aga atc gga aga ctt aag atg att ggt ggc tcc atg ctc atc tct Asp Arg Ile Gly Arg Leu Lys Met Ile Gly Gly Ser Met Leu Ile Ser 565 570 575	1728
gca gtc tgc tgc ttc ttc ctg ttt ggc aac agc gag tct gcg atg Ala Val Cys Cys Phe Phe Leu Phe Phe Gly Asn Ser Glu Ser Ala Met 580 585 590	1776
atc ggc tgg caa tgc ctg ttc tgt ggg acc agc att gca gcc tgg aat Ile Gly Trp Gln Cys Leu Phe Cys Gly Thr Ser Ile Ala Ala Trp Asn 595 600 605	1824
gct ctg gat gtg atc aca gta gag ctg tat ccc acc aac cag agg gcc Ala Leu Asp Val Ile Thr Val Glu Leu Tyr Pro Thr Asn Gln Arg Ala 610 615 620	1872
act gcc ttc ggc atc ctc aat gga ctg tgc aaa ctt ggt gcc atc ctg Thr Ala Phe Gly Ile Leu Asn Gly Leu Cys Lys Leu Gly Ala Ile Leu 625 630 635 640	1920
gga aac act atc ttt gct tct ttt gtt ggg atc acc aaa gtg gtc ccc Gly Asn Thr Ile Phe Ala Ser Phe Val Gly Ile Thr Lys Val Val Pro 645 650 655	1968
atc ctt ctg gct gct tct ctg gtt gga ggt ggc ttg gtt gcc ctt Ile Leu Leu Ala Ala Ser Leu Val Gly Gly Leu Val Ala Leu 660 665 670	2016
cga ctg cca gag act cga gag cag gtc ctg atg tga Arg Leu Pro Glu Thr Arg Glu Gln Val Leu Met 675 680	2052

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<211> 683
<212> PRT
<213> Rattus norvegicus

<400> 12
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Asp Gly Tyr Tyr Arg Gly Asn Glu Gln Asn Pro Glu Glu Asp Ala Gln
20 25 30

Ser Asp Val Thr Glu Gly His Asp Glu Glu Asp Glu Ile Tyr Glu Gly
35 40 45

Glu Tyr Gln Gly Ile Pro His Pro Asp Asp Val Lys Ser Lys Gln Thr
50 55 60

Lys Met Ala Pro Ser Arg Ala Asp Gly Leu Arg Gly Gln Ala Asp Leu
65 70 75 80

Met Ala Glu Arg Met Glu Asp Glu Glu Gln Leu Ala His Gln Tyr Glu
85 90 95

Thr Ile Ile Asp Glu Cys Gly His Gly Arg Phe Gln Trp Thr Leu Phe
100 105 110

Phe Val Leu Val Leu Ala Leu Met Ala Asp Gly Val Glu Val Phe Val
115 120 125

Val Ser Phe Ala Leu Pro Ser Ala Glu Lys Asp Met Cys Leu Ser Ser
130 135 140

Ser Lys Lys Gly Met Leu Gly Leu Ile Val Tyr Leu Gly Met Met Ala
145 150 155 160

Gly Ala Phe Ile Leu Gly Gly Leu Ala Asp Lys Leu Gly Arg Lys Lys
165 170 175

Val Leu Ser Met Ser Leu Ala Ile Asn Ala Ser Phe Ala Ser Leu Ser
180 185 190

Ser Phe Val Gln Gly Tyr Gly Ala Phe Leu Phe Cys Arg Leu Ile Ser
195 200 205

Gly Ile Gly Ile Gly Gly Ser Leu Pro Ile Val Phe Ala Tyr Phe Ser
210 215 220

Glu Phe Leu Ser Arg Glu Lys Arg Gly Glu His Leu Ser Trp Leu Gly
225 230 235 240

Ile Phe Trp Met Thr Gly Gly Ile Tyr Ala Ser Ala Met Ala Trp Ser
245 250 255

Ile Ile Pro His Tyr Gly Trp Gly Phe Ser Met Gly Thr Asn Tyr His
260 265 270

Phe His Ser Trp Arg Val Phe Val Ile Val Cys Ala Leu Pro Ala Thr
275 280 285

Val Ser Met Val Ala Leu Lys Phe Met Pro Glu Ser Pro Arg Phe Leu
290 295 300

Leu Glu Met Gly Lys His Asp Glu Ala Trp Met Ile Leu Lys Gln Val
305 310 315 320

His Asp Thr Asn Met Arg Ala Lys Gly Thr Pro Glu Lys Val Phe Thr
325 330 335

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Val Ser His Ile Lys Thr Pro Lys Gln Met Asp Glu Phe Ile Glu Ile
340 345 350

Gln Ser Ser Thr Gly Thr Trp Tyr Gln Arg Trp Leu Val Arg Phe Met
355 360 365

Thr Ile Phe Lys Gln Val Trp Asp Asn Ala Leu Tyr Cys Val Met Gly
370 375 380

Pro Tyr Arg Met Asn Thr Leu Ile Leu Ala Val Val Trp Phe Thr Met
385 390 395 400

Ala Leu Ser Tyr Tyr Gly Leu Thr Val Trp Phe Pro Asp Met Ile Arg
405 410 415

Tyr Phe Gln Asp Glu Glu Tyr Lys Ser Lys Met Lys Val Phe Phe Gly
420 425 430

Glu His Val His Gly Ala Thr Ile Asn Phe Thr Met Glu Asn Gln Ile
435 440 445

His Gln His Gly Lys Leu Val Asn Asp Lys Phe Ile Lys Met Tyr Phe
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Lys His Val Leu Phe Glu Asp Thr Phe Asp Lys Cys Tyr Phe Glu
465 470 475 480

Asp Val Thr Ser Thr Asp Thr Tyr Phe Lys Asn Cys Thr Ile Glu Ser
485 490 495

Thr Thr Phe Tyr Asn Thr Asp Leu Tyr Lys His Lys Phe Ile Asp Cys
500 505 510

Arg Phe Ile Asn Ser Thr Phe Leu Glu Gln Lys Glu Gly Cys His Met
515 520 525

Asp Phe Glu Glu Asp Asn Asp Phe Leu Ile Tyr Leu Val Ser Phe Leu
530 535 540

Gly Ser Leu Ser Val Leu Pro Gly Asn Ile Ile Ser Ala Leu Leu Met
545 550 555 560

Asp Arg Ile Gly Arg Leu Lys Met Ile Gly Gly Ser Met Leu Ile Ser
565 570 575

Ala Val Cys Cys Phe Phe Leu Phe Phe Gly Asn Ser Glu Ser Ala Met
580 585 590

Ile Gly Trp Gln Cys Leu Phe Cys Gly Thr Ser Ile Ala Ala Trp Asn
595 600 605

Ala Leu Asp Val Ile Thr Val Glu Leu Tyr Pro Thr Asn Gln Arg Ala
610 615 620

Thr Ala Phe Gly Ile Leu Asn Gly Leu Cys Lys Leu Gly Ala Ile Leu
625 630 635 640

Gly Asn Thr Ile Phe Ala Ser Phe Val Gly Ile Thr Lys Val Val Pro
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Ile Leu Leu Ala Ala Ala Ser Leu Val Gly Gly Leu Val Ala Leu

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665

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cgctctattc tgaactgtga gtggatgatg ctgttgcagc caagctgctg aacacactcc     180
gtggactctt ccctgctgtg cttgccat cggccgagat aaa atg gaa gac tcc      235
                                         Met Glu Asp Ser
                                         1

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tac aag gat agg act tca ctg atg aag ggc gcc aag gac att gcc aaa 283
 Tyr Lys Asp Arg Thr Ser Leu Met Lys Gly Ala Lys Asp Ile Ala Lys
 5 10 15 20

gag gtg aag aag caa aca gtg aag aag gtg aac cag gca gtg gac cgg 331
 Glu Val Lys Lys Gln Thr Val Lys Lys Val Asn Gln Ala Val Asp Arg
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gcc cag gat gaa tac acc cag cgg tcc tac agt cga ttc cag gat gaa      379
Ala Gln Asp Glu Tyr Thr Gln Arg Ser Tyr Ser Arg Phe Gln Asp Glu
          40           45           50

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gat gat gat gac tac tac cca cct gga gaa acc tac agt ggg gag 427
 Asp Asp Asp Asp Asp Tyr Tyr Pro Pro Gly Glu Thr Tyr Ser Gly Glu
 55 60 65

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gcc aat gat gat gaa ggc tca agt gaa gcc act gag ggt cac gat gaa      475
Ala Asn Asp Asp Glu Gly Ser Ser Glu Ala Thr Glu Gly His Asp Glu
    70          75          80

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gaa gac gag atc tat gaa ggg gaa tac cag ggc atc ccc agc acg aac      523
Glu Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile Pro Ser Thr Asn
85           90           95           100

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caa ggg aag gac agc ata gtg tct gta gga caa ccc aaa gga gat gag 571
 Gln Gly Lys Asp Ser Ile Val Ser Val Gly Gln Pro Lys Gly Asp Glu
 105 110 115

tac aag gac cgc aga gag ctg gag tca gag agg agg gct gat gag gag 619
 Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg Ala Asp Glu Glu
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gag ctc gcc cag cag tat gag ctg ata atc caa gag tgt ggc cat ggc 667
Glu Leu Ala Gln Gln Tyr Glu Leu Ile Ile Gln Glu Cys Gly His Gly

135	140	145	
cgt ttc cag tgg gcc ctt ttc ttc gtc ctg ggc atg gct ctc atg gca Arg Phe Gln Trp Ala Leu Phe Phe Val Leu Gly Met Ala Leu Met Ala 150	155	160	715
gac ggc gtg gag gtg ttt gtg gtg ggc ttt gtg tta ccc agt gca gag Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu Pro Ser Ala Glu 165	170	175	763
aca gac cta tgc ata ccg aat tca gga tct gga tgg cta ggc agc ata Thr Asp Leu Cys Ile Pro Asn Ser Gly Ser Gly Trp Leu Gly Ser Ile 185	190	195	811
gtg tac ctc ggg atg atg gtg ggg gcg ttc ttc tgg gga gga ctg gca Val Tyr Leu Gly Met Val Gly Ala Phe Phe Trp Gly Gly Leu Ala 200	205	210	859
gac aaa gtg gga agg aag cag tct ctt ctg att tgc atg tcc gtc aac Asp Lys Val Gly Arg Lys Gln Ser Leu Leu Ile Cys Met Ser Val Asn 215	220	225	907
gga ttc ttt gcc ttc ctt tct tca ttt gtc caa ggt tac ggc ttc ttt Gly Phe Phe Ala Phe Leu Ser Ser Phe Val Gln Gly Tyr Gly Phe Phe 230	235	240	955
ctc ctc tgt cgt ttg ctt tca gga ttc ggg att gga ggc gcc att ccc Leu Leu Cys Arg Leu Leu Ser Gly Phe Gly Ile Gly Gly Ala Ile Pro 245	250	255	1003
act gtg ttc tcc tac ttt gct gaa gtc ctg gcc cg ^g gag aag cgc ggt Thr Val Phe Ser Tyr Phe Ala Glu Val Leu Ala Arg Glu Lys Arg Gly 265	270	275	1051
gag cac ctc agt tgg ctc tgc atg ttc tgg atg att ggc ggt atc tat Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile Gly Gly Ile Tyr 280	285	290	1099
gct tca gcc atg gcc tgg gcc atc atc ccc cac tat ggg tgg agc ttc Ala Ser Ala Met Ala Trp Ala Ile Ile Pro His Tyr Gly Trp Ser Phe 295	300	305	1147
agc atg ggc tca gcc tac cag ttc cac agc tgg cgc gtc ttc gtc atc Ser Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg Val Phe Val Ile 310	315	320	1195
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ccc gaa agc cct cgg ttc ttg ctg gag gta gga aaa cat gat gaa gcc Pro Glu Ser Pro Arg Phe Leu Leu Glu Val Gly Lys His Asp Glu Ala 345	350	355	1291
tgg atg att ctg aag cta att cat gat acc aac atg aga gcc cg ^g ggc Trp Met Ile Leu Lys Leu Ile His Asp Thr Asn Met Arg Ala Arg Gly 360	365	370	1339
cag cca gag aag gtc ttc acg gta aat aaa atc aag act ccc aag caa Gln Pro Glu Lys Val Phe Thr Val Asn Lys Ile Lys Thr Pro Lys Gln 375	380	385	1387

ata gat gag ctg att gag att gag agc gac aca gga acc tgg tac cgg Ile Asp Glu Leu Ile Glu Ile Glu Ser Asp Thr Gly Thr Trp Tyr Arg 390 395 400	1435
agg tgt ttt gtt cg ^g atc cgc aca gaa ctg tac gga att tgg ttg act Arg Cys Phe Val Arg Ile Arg Thr Glu Leu Tyr Gly Ile Trp Leu Thr 405 410 415 420	1483
ttt atg aga tgc ttc aac tac cc ^g gtc agg gaa aac acc ata aag ctt Phe Met Arg Cys Phe Asn Tyr Pro Val Arg Glu Asn Thr Ile Lys Leu 425 430 435	1531
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ccc tat aaa ttc ata gac agc gag ttt caa aac tgc tcg ttt ctt cac Pro Tyr Lys Phe Ile Asp Ser Glu Phe Gln Asn Cys Ser Phe Leu His 550 555 560	1915
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aat atc gtg tct gct ctc ctg atg gac agg atc ggg cgc tta acg atg Asn Ile Val Ser Ala Leu Leu Met Asp Arg Ile Gly Arg Leu Thr Met 600 605 610	2059
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ctc tgt aaa gca gcg gcc gtc ctg gga aac tta ata ttc ggc tcc ttg Leu Cys Lys Ala Ala Ala Val Leu Gly Asn Leu Ile Phe Gly Ser Leu 680 685 690	2299
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gtt ctg atg tga caaaaaggcat tctttctct caccatgggt cagccctatt Val Leu Met 725	2447
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Phe Gln Asp Glu Asp Asp Asp Asp Tyr Tyr Pro Pro Gly Glu Thr 50 55 60	
Tyr Ser Gly Glu Ala Asn Asp Asp Glu Gly Ser Ser Glu Ala Thr Glu 65 70 75 80	
Gly His Asp Glu Glu Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile 85 90 95	
Pro Ser Thr Asn Gln Gly Lys Asp Ser Ile Val Ser Val Gly Gln Pro 100 105 110	

Lys Gly Asp Glu Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg
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Ala Asp Glu Glu Glu Leu Ala Gln Gln Tyr Glu Leu Ile Ile Gln Glu
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Cys Gly His Gly Arg Phe Gln Trp Ala Leu Phe Phe Val Leu Gly Met
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Ala Leu Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu
165 170 175

Pro Ser Ala Glu Thr Asp Leu Cys Ile Pro Asn Ser Gly Ser Gly Trp
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Leu Gly Ser Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Phe Trp
195 200 205

Gly Gly Leu Ala Asp Lys Val Gly Arg Lys Gln Ser Leu Leu Ile Cys
210 215 220

Met Ser Val Asn Gly Phe Phe Ala Phe Leu Ser Ser Phe Val Gln Gly
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Tyr Gly Phe Phe Leu Leu Cys Arg Leu Leu Ser Gly Phe Gly Ile Gly
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Gly Gly Ile Tyr Ala Ser Ala Met Ala Trp Ala Ile Ile Pro His Tyr
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Val Phe Val Ile Val Cys Ala Leu Pro Cys Val Ser Ser Val Val Ala
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His Asp Glu Ala Trp Met Ile Leu Lys Leu Ile His Asp Thr Asn Met
355 360 365

Arg Ala Arg Gly Gln Pro Glu Lys Val Phe Thr Val Asn Lys Ile Lys
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Thr Pro Lys Gln Ile Asp Glu Leu Ile Glu Ile Glu Ser Asp Thr Gly
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405 410 415

Ile Trp Leu Thr Phe Met Arg Cys Phe Asn Tyr Pro Val Arg Glu Asn
420 425 430

39/44

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435 440 445

Gly Leu Ser Val Trp Phe Pro Asp Val Ile Lys His Leu Gln Ser Asp
450 455 460

Glu Tyr Ala Leu Leu Thr Arg Asn Val Gln Lys Asp Lys Tyr Ala Asn
465 470 475 480

Phe Ser Ile Asn Phe Thr Met Glu Asn Gln Val His Thr Gly Met Glu
485 490 495

Tyr Asp Asn Gly Arg Phe Leu Gly Val Lys Phe Lys Ser Val Thr Phe
500 505 510

Lys Asp Ser Val Phe Lys Ser Cys Thr Phe Asp Asp Val Thr Ser Val
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Asn Thr Tyr Phe Lys Asn Cys Thr Phe Ile Asp Thr Leu Phe Glu Asn
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Thr Asp Phe Glu Pro Tyr Lys Phe Ile Asp Ser Glu Phe Gln Asn Cys
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Ser Phe Leu His Asn Lys Thr Gly Cys Gln Ile Thr Phe Asp Asp Asp
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Tyr Ser Ala Tyr Trp Ile Tyr Phe Val Asn Phe Leu Gly Thr Leu Ala
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Val Leu Pro Gly Asn Ile Val Ser Ala Leu Leu Met Asp Arg Ile Gly
595 600 605

Arg Leu Thr Met Leu Gly Gly Ser Met Val Leu Ser Gly Ile Ser Cys
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Phe Phe Leu Trp Phe Gly Thr Ser Glu Ser Met Met Ile Gly Met Leu
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Cys Leu Tyr Asn Gly Leu Thr Ile Ser Ala Trp Asn Ser Leu Asp Val
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Val Thr Val Glu Leu Tyr Pro Thr Asp Arg Arg Ala Thr Gly Phe Gly
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Phe Gly Ser Leu Val Ser Ile Thr Lys Ala Ile Pro Ile Leu Leu Ala
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Glu His Asp Val Gln Ile Glu Gly Val Arg Val Gly Leu Glu Ala Val			
35 40 45			
gag ctg gat gat gga gca gct gtc ccc aag gag ttt gcc aat ccc act			192
Glu Leu Asp Asp Gly Ala Ala Val Pro Lys Glu Phe Ala Asn Pro Thr			
50 55 60			
gat gac act ttc atg gtc gaa gat gcg gtg gaa gcc att ggg ttc gga			240
Asp Asp Thr Phe Met Val Glu Asp Ala Val Glu Ala Ile Gly Phe Gly			
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Arg Phe Gln Trp Lys Leu Ser Val Leu Thr Gly Leu Ala Trp Met Ala			
85 90 95			
gac gcc atg gag atg att ctg agc atc ctg gcg cct cag ctg cac			336
Asp Ala Met Glu Met Met Ile Leu Ser Ile Leu Ala Pro Gln Leu His			
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Cys Glu Trp Arg Leu Pro Ser Trp Gln Val Ala Leu Leu Thr Ser Val			
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gtc ttc att ggt atg atg tcc agt tct acg ctc tgg gga aac atc tcg			432
Val Phe Ile Gly Met Met Ser Ser Ser Thr Leu Trp Gly Asn Ile Ser			
130 135 140			
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Asp Gln Tyr Gly Arg Lys Thr Gly Leu Lys Ile Ser Val Phe Trp Thr			
145 150 155 160			
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Leu Tyr Tyr Gly Ile Leu Ser Ala Phe Ala Pro Val Tyr Ser Trp Ile			
165 170 175			
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Leu Val Leu Arg Gly Leu Val Gly Phe Gly Ile Gly Gly Val Pro Gln			
180 185 190			
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Ser Val Thr Leu Tyr Ala Glu Phe Leu Pro Met Lys Ala Arg Ala Lys			
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Cys Ile Leu Leu Ile Glu Val Phe Trp Ala Ile Gly Thr Val Phe Glu			
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Val Leu Leu Ala Val Phe Val Met Pro Ser Leu Gly Trp Arg Trp Leu			
225	230	235	240
ctg ctg ctg tcg gcc gct cca cta ctt gtc ttt gct gtt ctg tgt ttc			768
Leu Leu Leu Ser Ala Ala Pro Leu Leu Val Phe Ala Val Leu Cys Phe			
245	250	255	
tgg ctg cca gag agt gct agg tac gat gtg ctg tct ggg aac cag gaa			816
Trp Leu Pro Glu Ser Ala Arg Tyr Asp Val Leu Ser Gly Asn Gln Glu			
260	265	270	
aag gcg att gct acc tta aag cgg atc gca aca gaa aat gga gcc ccc			864
Lys Ala Ile Ala Thr Leu Lys Arg Ile Ala Thr Glu Asn Gly Ala Pro			
275	280	285	
atg cct ctg ggg aag ctc atc atc tcc aga cag gaa gac cga ggc aaa			912
Met Pro Leu Gly Lys Leu Ile Ile Ser Arg Gln Glu Asp Arg Gly Lys			
290	295	300	
atg agg gac ctt ttc aca ccc cac ttt cgt tgg aca act ctg ctg ctg			960
Met Arg Asp Leu Phe Thr Pro His Phe Arg Trp Thr Thr Leu Leu Leu			
305	310	315	320
tgg ttt ata tgg ttc tcc aat gcc ttc tct tat tac ggc ttg gtt ctg			1008
Trp Phe Ile Trp Phe Ser Asn Ala Phe Ser Tyr Tyr Gly Leu Val Leu			
325	330	335	
ctc acc aca gaa ctc ttc cag gcc gga gat gtt tgc agc atc tcc agc			1056
Leu Thr Thr Glu Leu Phe Gln Ala Gly Asp Val Cys Ser Ile Ser Ser			
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Arg Lys Lys Ala Val Glu Ala Lys Cys Ser Leu Ala Cys Glu Tyr Leu			
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Ser Lys Glu Asp Tyr Met Asp Leu Leu Trp Thr Thr Leu Ser Glu Phe			
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Pro Gly Val Leu Val Thr Leu Trp Val Ile Asp Arg Leu Gly Arg Lys			
385	390	395	400
aag acc atg gct ctg tgt ttc gtc atc ttt tcc ctc tgc agc ctc ctg			1248
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Leu Phe Ile Cys Ile Gly Arg Asn Val Leu Thr Leu Leu Phe Ile			
420	425	430	
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Ala Arg Ala Phe Ile Ser Gly Gly Phe Gln Ala Ala Tyr Val Tyr Thr			
435	440	445	
cct gag gtg tat cca acg gcg acg agg gcg ctg ggc ctg ggc acc tgc			1392
Pro Glu Val Tyr Pro Thr Ala Thr Arg Ala Leu Gly Leu Gly Thr Cys			

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465	470	475	480
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485	490	495	
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500	505	510	
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515	520	525	
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Glu Leu Asp Asp Gly Ala Ala Val Pro Lys Glu Phe Ala Asn Pro Thr			
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Asp Asp Thr Phe Met Val Glu Asp Ala Val Glu Ala Ile Gly Phe Gly			
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Arg Phe Gln Trp Lys Leu Ser Val Leu Thr Gly Leu Ala Trp Met Ala			
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Asp Ala Met Glu Met Met Ile Leu Ser Ile Leu Ala Pro Gln Leu His			
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Cys Glu Trp Arg Leu Pro Ser Trp Gln Val Ala Leu Leu Thr Ser Val			
115	120	125	
Val Phe Ile Gly Met Met Ser Ser Ser Thr Leu Trp Gly Asn Ile Ser			
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Asp Gln Tyr Gly Arg Lys Thr Gly Leu Lys Ile Ser Val Phe Trp Thr			

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Ser Val Thr Leu Tyr Ala Glu Phe Leu Pro Met Lys Ala Arg Ala Lys			
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Met Pro Leu Gly Lys Leu Ile Ile Ser Arg Gln Glu Asp Arg Gly Lys			
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Ser Lys Glu Asp Tyr Met Asp Leu Leu Trp Thr Thr Leu Ser Glu Phe			
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Ala Arg Ala Phe Ile Ser Gly Gly Phe Gln Ala Ala Tyr Val Tyr Thr			
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Pro Glu Val Tyr Pro Thr Ala Thr Arg Ala Leu Gly Leu Gly Thr Cys			
450	455	460	
Ser Gly Met Ala Arg Val Gly Ala Leu Ile Thr Pro Phe Ile Ala Gln			
465	470	475	480

Val Met Leu Glu Ser Ser Val Tyr Leu Thr Leu Ala Val Tyr Ser Gly
485 490 495

Cys Cys Leu Leu Ala Ala Leu Ala Ser Cys Phe Leu Pro Ile Glu Thr
500 505 510

Lys Gly Arg Ala Leu Gln Glu Ser Ser His Arg Glu Trp Gly Gln Glu
515 520 525

Met Val Gly Arg Gly Thr Asn Ser Thr Gly Val Pro Arg Ser Asn Ser
530 535 540

Gly Ser Gln Glu
545